

## Distress tolerance, anxiety-related symptoms, stress, and depression among dropout and non-dropout university students: a mediation analysis

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### Abstract

This study explores the relationship between distress tolerance and depression with mediating role of anxiety-related symptoms and stress among dropout and non-dropout university students. This cross-sectional study was conducted from October 2019 to December 2020. Participants' age ranged between 20-40 years. Data was collected using the Distress Tolerance Scale and Depression Anxiety and Stress Scale. Descriptive, t-test, and mediation analyses were performed to calculate the results. A sample of 500 respondents was recruited. A significant difference was noted between dropout and non-dropout students on CGPA ( $p < 0.001$ ), depression ( $p < 0.001$ ), anxiety ( $p < 0.001$ ), stress ( $p < 0.001$ ), tolerance ( $p < 0.001$ ), absorption ( $p < 0.001$ ), appraisal ( $p < 0.001$ ), and distress tolerance ( $p < 0.001$ ). Mediation analysis reveals that stress and anxiety significantly mediate between distress tolerance and depressive symptoms (i.e.,  $F(498) = 31.14, p < 0.001$ ;  $F(498) = 34.14, p < 0.001$ ;  $F(496) = 161.21, p < 0.001$ ). It is concluded that low distress tolerance increases stress and anxiety, triggering depressive symptoms.

**Keywords:** Distress Tolerance, Stress, Anxiety, Depression, Dropout-Non-dropout Students.

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### Introduction

For the longest time, it has been believed that the student community is more relaxed but actually it is not. For example, high parental expectations, self-expectations, admission competition, unemployment, and financial stability are the main factors that cause distress.<sup>1</sup> Due to this situation, mental health problems are increasing among students.<sup>2</sup> Academic failure is another issue of psychological distress. Students usually drop out after they consistently fail to perform their regular academic

tasks; however, after dropping out, many students find it hard to readjust into the society and participate in other economic activities.<sup>2</sup> Depression is a common mental disorder that could be reduced by various interventions. Psychological problems are approximately higher in students as compared to the general population and higher in dropout students.<sup>3</sup>

Low distress tolerance increases mental health problems.<sup>4</sup> The high degree of distress among students causes anxious behaviour and provokes the stressful situation, which produces negative emotional and academic outcomes.<sup>5</sup> Depressive symptoms significantly affect students' academic performance, trigger negative beliefs, and replicate the negative thoughts which cause severe psychological distress.<sup>6</sup> Another study reported that engineering students perceived depression at 25%, anxiety at 32%, and stress at 20%, while social science students perceived 21% depressive symptoms, 30% anxiety-related symptoms, and 17% daily life stressors, and medical students perceived a higher degree of depression at 25%, fear 34%, and stress 23%.<sup>7</sup> Similarly, in North America and Europe, it is reported that university students are at higher risk of mental distress.<sup>8</sup>

This research aimed to explore the prevalence of mental health problems among students who dropout from university, and investigate the impact of distress tolerance on depression with mediating effect of anxiety and stress among university dropout and non-dropout students.

### Materials and Methods

A cross-sectional study was carried out at the Government College University, Faisalabad, from August 2019 to December 2020. The current study protocols were approved by the Institutional Review Board (IRB; Ref.NO.GCUF/ERC/204) of the Government College University, Faisalabad. The sample size was estimated using G-Power software<sup>9</sup> (version 3.1.9.4) with an effect size of 0.40,  $\alpha$  error 0.001 with the power of 0.9521. For the current study, the G-Power calculator generated a sample size of 457 participants; we targeted 560 respondents, and 500 university students met the study inclusion-exclusion criteria. Participants' age ranged between 20 to 40 years. Participants were briefly explained about the study, and written informed consent was taken before applying a

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detailed demographic form to collect research participants' personal information. The Distress Tolerance Scale comprised 15 items with four subscales. Moreover, Depression Anxiety and Stress Scale (DASS) was administered.

### Results

A total of 500 respondents comprising 253 (50.6%) dropout

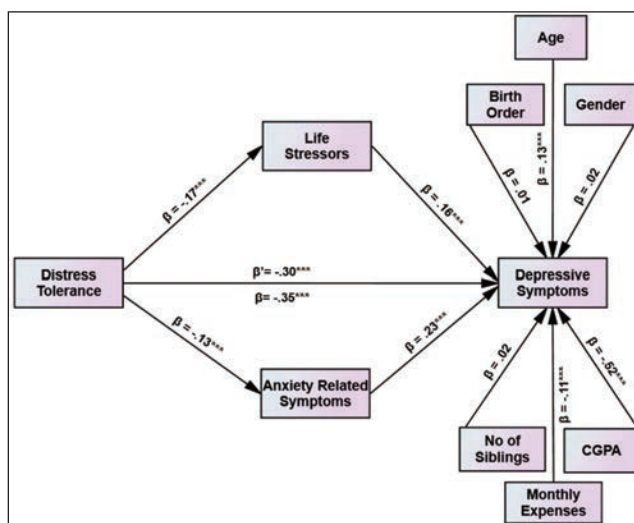
**Table-1:** Descriptive Statistics for the Demographic Characteristics of the Sample (n=500).

Baseline Characteristics	Categories	Male n(%)	Female n(%)	Total n(%)
Marital Status	Married	11 (4.5)	5 (1.9)	16 (3.2)
	Unmarried	231 (95.5)	253 (98.1)	484 (96.8)
Current Residence	Day Scholars	161 (66.5)	196 (76.0)	357 (71.4)
	Boarding	81 (33.5)	62 (24.0)	143 (28.6)
Father's Occupation	GOVT	69 (28.5)	79 (30.0)	148 (29.6)
	Private	22 (9.1)	35 (13.6)	57 (11.4)
	Business	133 (55.0)	123 (47.7)	256 (51.2)
	None	18 (7.4)	31 (8.1)	39 (7.8)
Father's Education	Educated	217 (89.7)	249 (96.5)	466 (93.2)
	Uneducated	25 (10.3)	9 (3.5)	34 (6.8)
Mother's Education	Educated	194 (80.2)	240 (93.0)	434 (86.8)
	Uneducated	48 (19.8)	18 (7.0)	66 (13.2)
Programme	BS/MSc	198 (81.820)	179 (69.38)	377 (75.4)
	MS/ M Phil	44 (18.18)	79 (30.62)	123 (24.6)
Residence	Own	228 (94.2)	248 (96.1)	476 (95.2)
	Rent	14 (5.8)	10 (3.9)	24 (4.6)
Depression	No Depression	90 (37.2)	119 (46.1)	209 (41.8)
	Mild	54 (22.3)	38 (14.7)	92 (18.4)
	Moderate	64 (26.4)	66 (25.6)	130 (26.0)
	Severe	34 (14.0)	35 (13.6)	69 (13.8)
Anxiety	No Anxiety	66 (27.3)	74 (28.7)	140 (28.0)
	Mild	35 (14.5)	41 (15.9)	76 (15.2)
	Moderate	72 (29.8)	75 (29.1)	147 (29.4)
	Severe	69 (28.5)	68 (26.4)	137 (27.4)
Stress	No Stress	71 (29.3)	70 (27.1)	141 (28.0)
	Mild	114 (47.1)	112 (43.4)	226 (45.2)
	Moderate	46 (19.0)	57 (22.1)	103 (20.6)
	Severe	11 (4.5)	19 (7.4)	30 (6.0)

**Table-2:** Difference between dropout students and non-dropout students on the variables of age, grades, psychological distress and distress tolerance scale (n=500).

Scales	Dropout Students (n=253)	Non-Dropout Students (n=247)	t-test	p-value	Confidence Interval 95%	
	Mean ±SD	Mean±SD			LL	UL
Mean Age (years)	21.77±3.06	21.81±2.74	0.14	>0.893	-0.48	0.55
CGPA	3.26±0.47	3.46±0.40	5.22	<0.001	0.12	0.28
Depression	18.02±5.94	5.82±2.89	-29.31	<0.001	-11.37	-13.02
Anxiety	14.47±6.35	7.94±4.65	-13.11	<0.001	-7.52	-5.56
Stress	18.33±6.73	12.05±5.57	-11.36	<0.001	-7.37	-5.20
PDT	50.82±14.91	25.82±10.23	-21.93	<0.001	-22.76	-27.26
Tolerance	6.89±2.58	8.06±3.25	4.48	<0.001	-67	1.69
Absorption	7.46±2.65	8.87±3.01	5.56	<0.001	-92	1.91
Appraisal	15.83±3.74	17.19±4.65	3.62	<0.001	.63	2.11
Regulation	7.02±2.90	7.16±3.17	0.51	>0.611	-0.40	0.67
DTS	37.19±9.05	41.28±10.75	4.61	<0.001	2.34	5.84

p<.05; CGPA= Cumulative Grade Point Average; PDT= Psychological Distress Total; DTS= Distress Tolerance Scale.



**Figure:** Statistical Path of Mediation analysis.

and 247 (49.4%) non-dropout university students (Table 1) participated in the study. There were 242 (48.4%) males, and 258 (51.6%) females; 484 (96.8%) were single and 16 (3.20%) were married

The findings indicate (Table 2) that there is a significant difference between dropout students and non-dropout students on the CGPA (i.e.,  $t=5.22; p<0.000$ ). Moreover, the results show that dropout students perceived high degree of depression, anxiety, stress, and psychological distress as compared to non-dropout students (i.e.  $t=-29.31, p<0.000$ ;  $t=-13.11, p<0.000$ ,  $t=-11.36, p<0.000$  &  $t=-21.93, p<0.000$ , respectively). Similarly, dropout students perceived a lower degree of tolerance as compared to non-dropout students on the variable of tolerance, absorption, appraisal, regulation, and overall distress tolerance (i.e.,  $t=4.48, p<0.000$ ;  $t=5.56, p<0.000$ ,  $t=3.62, p<0.000$  &  $t=4.61, p<0.000$  respectively).

Results (Table 3) showed that tolerance was a significant negative predictor of depression, whereas anxiety and stress were significant positive predictors of depression (Figure).

### Discussion

The findings indicate that the degree of depression and anxiety-related symptoms increases in students due to academic stressors, especially dropout problems. The degree of these mental health issues is higher in female students than males.<sup>10</sup> The dropout students were noted to be more vulnerable to depression, anxiety, and stress, which create a degree of overall psychological distress compared to non-dropout students.<sup>11</sup> These findings are

**Table-3:** Mediation Analysis between Tolerance and Depression through Anxiety and Stress among Dropout and Non-dropout University Students (n=500).

Predictors	Life Stressors (LS)			Anxiety Related Symptoms (ARS)			Depressive Symptoms		
	Coeff.	SE	p-value	Coeff.	SE	p-value	Coeff.	SE	p-value
<b>Constant</b>	17.49	5.70	0.002	20.00	5.25	0.002	37.20	4.57	0.001
DTS	-0.17	0.03	0.001	-0.13	0.03	0.001	-0.30	0.03	0.001
LS							0.16	0.04	0.001
ARS							0.23	0.05	0.001
<b>Covariates</b>									
Age (years)	0.12	0.31	0.032	0.08	0.28	0.123	0.13	0.27	0.007
Gender	0.08	0.60	0.060	0.02	0.56	0.592	0.02	0.53	0.647
Birth Order	0.01	0.19	0.919	0.03	0.18	0.608	0.01	0.17	0.856
No. of Sib.	-0.01	0.21	0.807	0.05	0.20	0.313	0.02	0.19	0.660
CGPA	-0.20	0.92	0.001	-0.27	0.85	0.001	-0.52	0.83	0.001
M. Exp.	-0.04	0.01	0.362	-0.05	0.01	0.25	-0.11	0.2	0.001
		R2=11			R2=13			R2=63	
		F(7,493) = 7.94, p < .001			F(7,493) = 9.88, p < .001			F(7,493) = 93.40, p < .001	

p < 0.001; Coeff = Coefficient; SE = Standard Error; DTS = Distress Tolerance Scale; No. of Sib. = Numbers of Siblings; M. Exp = Monthly Expenses

consistent with previous studies.<sup>11,12</sup> Dropout students were investigated significantly differently on the variable of tolerance, absorption, appraisal, regulation, and the scale of distress tolerance compared to their counterparts. Low intolerant behaviour increases the frequency of depressive symptoms; it also promotes symptoms of anxiety and stresses.<sup>12</sup>

Mediation analysis indicates that stress and anxiety mediate between tolerant behaviour and mental health problems among students (Table 3, Figure). These findings are in line with the previous studies.<sup>13</sup> In students, distress tolerance triggers the degree of stressors and provokes anxiety-related symptoms. The severity of symptoms causes emotional disturbance and mood instability. This phenomenon does not end at this stage; it reflects emotional and behavioural problems.<sup>14</sup> The students with unstable emotional and behavioural characteristics perceive depressive symptoms, which significantly affect the students' academic performance.<sup>15</sup>

## Conclusion

It is concluded that mental health problems are rising among university students, and it is significantly associated with dropout rates and academic failure.

## Recommendations and limitations of the study

The current study presents very important findings for academicians, practitioners, and mental health professionals to understand and address the pattern of mental health problems among drop-out students. This study does not describe the dropout rate of medical students, engineering students, and students of below undergraduate programmes.

**Disclaimer:** None to declare.

**Conflict of interest:** None to declare.

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